East Bay Chapter of the Association for Women in Science

AWIS
ASSOCIATION FOR WOMEN IN SCIENCE
East Bay California

Volume 17, Issue 1 March 2010

Special points of interest:

- **Networking Meeting**
- **New branding for AWIS**
- **National Lab Day**
- **Introduction to Bioinformatics**

Inside this issue:

Networking Night

by Leala Thomas

Who did you meet on January 28th? A self-employed, PhD, project management female scientist with two children and a Linked in profile. East Bay AWIS began their 2010 calendar year with a networking meeting attended by about 50 women and men.

As everyone arrived and mingled they had a chance to introduce themselves and find others to fit prompts on a Bingo card. At the end of the game there were five participants who had found people in all the categories.

The next exercise encouraged participants to practice their 30 second elevator pitches with 3 others. They rotated one to the other until the end when they were asked to introduce the first person they had met to their team.

The final exercise revolved around 8 discussion topics and enabled attendees to voice their concerns and offer helpful solutions to each other.

The evening was enthusiastically enjoyed by all who attended and at least a few new professional connections were forged.

AWIS has New Branding Language

Who We Are?

AWIS is a premier leadership organization advocating the interests of women in science and technology.

For nearly 40 years AWIS has fought for equity and career advancement for women from the lab bench to the board room.

AWIS is vigilant against workforce obstacles and has shattered barriers that prevent women from realizing their full potential in the sciences.

AWIS unites women through its nationwide network of chapters and partnerships with aligned professional organizations.

What the National Branding Language Means to You

There are committed advocates at the national headquarters of AWIS with a 40-year track record of activity addressing the equity issues of female scientists. Although we have come a long way, barriers and bias still exist in STEM (Science, Technology, Engineering, and Mathematics). AWIS continues to focus on these issues and is constantly supporting women through career development and their nationwide network of chapters and partnerships.

More information on national can be found at www. awis.org.

Your local chapter information can be found at www.ebawis.org.

Your local chapter needs you! Volunteer opportunities exist: Membership Outreach Committee, Newsletter Contributors, Public Relations and Advertising Committee.

March Meeting: Careers for Scientists in Legal Professions

MARCH 25th: Careers for Scientists in Legal Professions

Join us March 25, 2010 from 6:30-8:30PM at Novartis, Bldg X-310 for a panel discussion of legal professions for scientists featuring: Madhuri "Mani" Roy, PhD, a Scientific Advisor and Patent Agent at Wilson, Sonsini, Goodrich, and Rosati, Kathleen McCowin, JD, MS, a Licensing Officer from the Office of Licensing Technology at UC Berkeley, and Carol Mimura, PhD, Assistant Vice Chancellor for Intellectual Property and Industry Research Alliances at UC Berkeley.

Have you questions ready because it promises to be an interesting evening full of information!

Remember to RSVP on Eventbrite and please allow extra time for Novartis security procedures.

Spring Reading: *The Calculus of Friendship*

"Calculus thrives on continuity."

An intimate view of mentorship is revealed by US mathematician Steven Strogatz in *The Calculus of Friendship*, a compilation of letters exchanged over 30 years with his high-school math teacher, Don Joffray. Through their correspondence they share problems in calculus, chaos theory and major life events, from professional and sporting successes to family bereavements and divorce. The book touchingly charts their changing roles and relationship.
(***Nature***)

Strogatz weaves their letters into reflections on the philosophical similarities between calculus and human relationships and portrays a friendship firmly founded on a love of dreaming up and solving calculus problems. One can also feel the personality and humor of these pen pals emerging through their symbol-sprinkled sentences.
(***Science***)

Featured PROFILE

Name: Kathleen (Kay) Monroe

Degrees and Names of Colleges: BA, Animal Science, UC Davis; MBA, Golden Gate University

Current employer and title: VP Project Management &Quality Assurance, Malaria Team Leader, Institute for One World Health (IOWH)

What led you to a career in health? Always wanted to be a veterinarian, hence the Animal Science degree. I was married and had children while earning my undergraduate degree, so I took the first job offered to me– as a lab technician at Genentech– since I could not afford to remain in school.

Any other careers considered? Not really, except maybe a singer/dancer in Broadway musicals.

Tell me about your biggest success? My children.

Your biggest missed opportunity or greatest obstacle and how you overcame it? I have had a lot of obstacles in my life, but one of the biggest was how to be a better manager of employees.

Best way to stay competitive? Stay up on what's new in your field and network continuously.

Toughest decision? Moving to new jobs– these are always tough because you want to make a good decision and you hope it will last – never a guarantee anymore.

Biggest surprise in current position? The business model required does not fit any I have been exposed to before– it is a mix of several.

Philosophy or favorite quote? "Just do it"- thanks Nike! But I also use this one a lot: "Try it, you'll like it."

One word that describes you? Driver.

Favorite book? *Gone with the Wind*

Favorite movie? *The Fifth Element*

Favorite vacation spot? Italy– especially Rome but I haven't been to Venice yet– which is next on the list.

Greatest inspiration or mentor? Bob Swanson– one of Genentech's founders.

"Stay up on what's new in your field and network continuously."

National Lab Day

In late November 2009, President Obama announced his "Educate to Innovate" campaign to improve STEM education in America's schools. Many STEM professional societies are participating in the campaign's two signature events: National Lab Day and National STEM Week.

The first of the two, National Lab Day, focuses on matching scientists and engineers with local classroom teachers to help with specific resources and activities. This event will take place during the first week May 2010.

AWIS chapters and members are encouraged to become involved with this initiative as part of their outreach program. For more information about National Lab Day, including how organizations can participate, please visit:http://www.nationallabday.org.

Anyone interested in participating? Respond to news@ebawis.org

Introduction to Bioinformatics

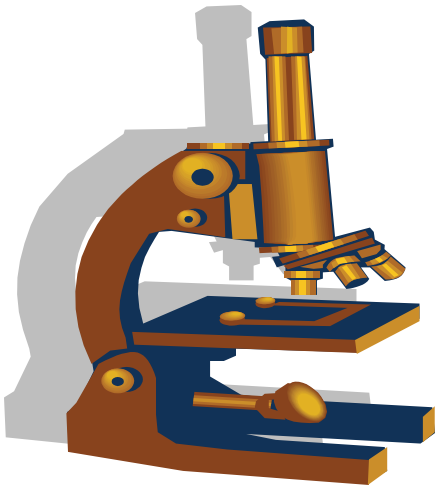
By Janice Hamer with assistance from Anila Sejpal

Speakers to East Bay AWIS chapter meetings over the past year have referenced bioinformatics in their presentations explaining parts of this emerging field but leaving many questions unanswered. Toby Beth Freeman, PhD, predicted that bioinformatics would be an area for future growth. Later, Laura Heiser, PhD, showed the impact that bioinformatics has had on her laboratory's breast cancer studies. Besides blending biology with information technology, where is this science now? Where does it appear to be heading in the future? What current opportunities or directions may open within this dynamic field of study?

Heather Trumbower, a Palo Alto AWIS member, arrived at bioinformatics from the traditional computer science area of commerce. She eventually discovered biology and the potential for combining it with her computation skills. Completing a bioinformatics certificate at University of California, Santa Cruz (UCSC) helped her to segue into employment with the school's pioneering bioinformatics department. (This department could at one time claim to have the greatest number of female principal investigators.)

UCSC's contributions to the field of bioinformatics are numerous with notable names, collaborations, and the development of new technologies— David Haussler, PhD and Hidden Markov Models and W. James Kent, PhD and genome browsers. These developments helped to introduce the era of genome projects. Ms. Trumbower participated on the Encyclopedia ENCODE project striving "…to build a comprehensive parts list of the functional elements of the human genome." Later she joined privately held Navigenics, a local Bay Area company that screens for individual risk as a guide to understanding genetic predisposition to known mutations such as particular diabetes. This offers the carrier of a mutated gene an opportunity to attempt to mitigate the potential biologic effects through lifestyle adaptation.

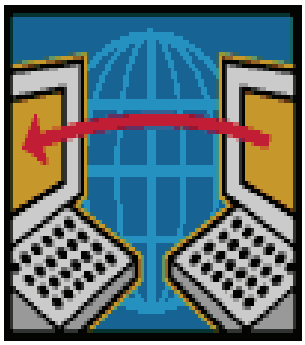
As a result of projects at UCSC and Navigenics, large amounts of genetic sequencing data are currently archived. Deciphering the accumulated information will require machines with faster computational abilities than are presently available. The ongoing concern is the economic costs associated with these new technologies. Although bioinformaticists need to adapt technologically, they still use the PERL language to run many of the algorithms needed in the field. The traditional IT world , however, opts for programming codes such as Python. In the end the bioinformatics world draws heavily from the IT world pioneering innovations that could be returned and used in non-biology applications.



Principal Investigator, Sean Mooney, PhD, at the Buck Institute, entered bioinformatics from the biology side. While completing a degree in Genetics, he found ways to use an interest in programming to solve problems. Dr. Mooney contributed to underlying annotation tools for major databases such as GO and Chimera. At the Institute, he heads a team that specializes in resolving information problems. With a love for predictive science, Dr. Mooney sees bioinformatics models as a means to accomplish more biology via computer. This cyber knowledge should more accurately pinpoint the necessary bench work and potentially save time and money by directing the research to the essential activities.

Challenges facing bioinformatics in the future revolve around the vast generation of data. Consider for a moment that a sequencer, the ABI Solid, *generates 200 million short sequences of DNA for each successful run!* The acquired data must be analyzed and the results fed into large databases– GO, Swiss Prot, MINT– for public access. Early in biotechnology, these results could simply be presented as metabolic pathways on a poster or saved in an Excel spreadsheet. However, the current volumes of data drive the need to continually develop new ways to evaluate the information. This is reflected in the expansion of genomics into proteomics and systems biology. As important as the ongoing analyses of incoming data, maintenance of existing repositories will be an enormous, but essential task. In a rapidly changing IT environment, Dr. Mooney cited "code rot" as an obstacle for sharing information.

A peripheral aspect of bioinformatics lies in text data mining. As part of the biotext research group of Marti Hearst, PhD at UC Berkeley, I discovered how information management experts sought to facilitate retrieval tasks in bio-literature. Our project goals included enabling the researcher with, for example, a question about *the effect of one protein on a second,* the ability to select papers with relevant information about a particular interaction by using trained IT tools to sort through the reams of published literature available. In that way the interaction could be specifically characterized as *protein A binds with protein B*.



Others prominent in the field include Wanda Pratt, PhD at University of Washington who has used text features to develop a LitLinker tool and accurately predict the relationship between fish oils and migraine headaches. At Lawrence Berkeley National Laboratory, researcher Sung-Hou Kim, PhD employs text classifiers to determine relationships from sequence data.

Women are rapidly becoming players in this field. Attending a recent Silicon Valley Camp Code workshop, Ms. Trumbower noticed twice as many women in attendance. In general, however, fewer women are present in bioinformatics than biology. Dr. Mooney has observed that women are becoming prevalent in the field and suggests that future opportunities exist at all levels of education. When Ms. Trumbower first entered the field, she found that bioinformatics staff had either biology or programming backgrounds, but now have a blended experience. For a programmer seeking to lead in predictive science, a PhD is imperative while a biologist with some expertise in databases and programming could potentially fit into the field without a PhD. Computer languages particularly useful include Python, JAVA, MATLAB, Mathmatika, R, and PERL.

In conclusion, for those who master some of the requisite computer languages and have an accompanying knowledge of biology, bioinformatics might be the future for you. This is a field with rapidly accumulating volumes of information requiring interested participants to deal with the quantity, characterization, updating, and integration of bench information and the database. As phrased by Dr. Mooney, "It's an exciting field- (it) has lots of opportunities and continues to grow. " He suggests that you: "find a lab to do an internship and try to do something!"

East Bay Chapter of the Association for Women in Science (AWIS)

President: Mara Jefress
president@ebawis.org
V-President: Veena Kumar
vice-president@ebawis.org
Treasurer: Karen Adkison
treasurer@ebawis.org
Secretary: Ginger Jamias
secretary@ebawis.org
Webmaster
webcurator@ebawis.org
PR: Ginger Jamias
publicity@ebawis.org
Mentoring: Lysle Huang
mentorchair@ebawis.org
Sponsor Recruitment:
Ginger Jamias
sponsor@ebawis.org
Newsletter: Leala Thomas
news@ebawis.org

Www.ebawis.org

About our Organization

East Bay AWIS is an all volunteer organization established primarily as a professional organization for women in science yet open to non-scientists and men. Meetings are held bimonthly usually on the last Thursday of odd months at Novartis, Bldg X-310, 5300 Hollis St., Emeryville. Security procedures require that you sign in at the front desk. A networking social is held on the 2nd Tuesday of even months at Jupiter, 2181 Shattuck Ave, Berkeley. Please join us!

April 13, 2010: 6:30pm Jupiter Social

May 27, 2010: 6:30-8:30pm

Approaching Career Watersheds with Confidence with Cathy Akiyama

June 8, 2010: 6:30pm Jupiter Social

July 22, 2010: TBD

Direction to Novartis

Chapter meetings are held at **Novartis, Building X-310, 5300 Hollis Street in Emeryville.** Please allow extra time for the required security procedures.

From I-80 West: Exit at Powell St. Left on Powell St. at the stoplight. Continue on Powell until Hollis St. Turn right. Building X is a white and orange building on the left. The parking lot is open. Please check in with the guard at the door.

From I-80 East: Exit at Powell St. Right on Powell St. at the stoplight. Continue on Powell until Hollis St. Turn right. Building X is a white and orange building on the left. The parking lot is open. Please check in with the guard at the door.